

Atty. Docket No. 2003-0048-01
USSN 10/672,722

Remarks

Claims 1-67 remain pending in the above captioned application. Claims 1, 2 and 41-67 have been deemed allowed by the Examiner. Claims 3-12 and 24 and 25 stand rejected. Claims 13-23 and 26-40 are objected to as depending from a rejected base claim.

Claims 3-10 stand rejected under 35 U.S.C. §103 (a) as unpatentable over United States Patent No. 6198859, entitled LASER SYSTEM AND METHOD FOR BEAM ENHANCEMENT, issued to Broderick et al. on March 6, 2001 ("Broderick") in view of United States Patent No. 5982803, entitled FREE-SPACE GAS SLAB LASER, issued to Sukhman et al. on November 9, 1999 ("Sukhman").

Broderick discloses a laser system in which electrodes are shaped to control the mode of the lasing to eliminate or substantially reduce unwanted modes and emphasize a wanted mode(s), as noted in the Abstract:

A laser system and method for beam enhancement utilizes shaped electrodes or one or more shaped lasing media, including crystal media, to prescribe the operational transverse modes of the laser. The electrodes and shaped lasing media are shaped with respect to the transverse mode or modes to be selected for operational use.

Broderick does disclose that the laser system may be cooled by flow of gas:

Other embodiments utilize methods known in the art including utilizing liquid or gas flow through or within the laser structures or other systems using forms of convection, conduction, or radiation known in the art. (Col. 6, lines 13-17)

Nevertheless, Broderick does not disclose any fan for gas circulation nor any flow direction through the discharge region between electrodes. There is, therefore, no upstream fairing disclosed in FIG. 10 to which the Examiner refers. Rather, FIG. 10 of Broderick is noted to be:

FIG. 10 is a longitudinal cross-sectional schematic drawing of a slab laser utilizing a multiple triangular electrode embodiment of the present invention. (Col. 4, lines 4-6)

In addition, FIG. 10 and the elements to which the examiner has referred to as describing an anode and upstream fairing are disclosed to be:

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Further embodiments have more than one discharge space (gain region) by having more than one set of first and second electrodes such as 12g, 14g, 12h, 14h, and 12i, 14i for a tapered electrode configuration as shown in FIG. 9, and such as 12j, 14j, 12k, 14k, 12l, and 14l for a triangularly shaped electrode as shown in FIG. 10. (Col. 12, lines 18-23)

Thus, even if 12l of FIG. 10 of Broderick is a fairing, which it is not, since it is disclosed to have a transverse lasing mode influencing shape and not a gas flow forming shape, it is not also an "upstream" fairing. It is, rather, displaced longitudinally along the length of the discharge region as one of several portions of an electrode 12j, 12k and 12l.

The preamble of claim 3 has been amended to further point out and distinctly define the meaning of "upstream fairing" in the body of the claim.

Therefore, the Examiner has failed to make out a *prima facie* case of obviousness since not all of the claimed elements are found in the combination of Broderick and Sukhman. In addition applicants submit that Sukhman is not analogous art and the teaching of Sukhman regarding anode materials in a CO₂ laser is not instructive in regard to electrode structures and materials in a fluorine gas containing gas discharge laser.

In addition, contrary to the Examiner's position that Sukhman discloses: anodizing the electrode (col.3, lines 39-42) in a gas discharge laser device to optimize the laser operating parameters (col. 3, lines 8-17) the latter referenced portion of the Sukhman Specification says noting about anodizing and refers to "electrode gap dimension."

Also, contrary to the Examiner's assertion that Sukhman discloses: selecting the thickness of the anodized layer on the discharge footprint of the electrode to obtain a desired impedance (col. 8, lines 28-33 and 38-39) and erosion resistance results from the selected anodizing material the cited portion of Sukhman refers to "spacing between the electrodes" to allow for "rapid initial excitation," also stated as "rapid start up of the laser."

For the above stated reasons, the Examiner's rejection of claims 3-10 is improper and the Examiner is respectfully requested withdraw the rejections of claims 3-10 and allow claims 3-10.

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Claims 11-12 and 24-25 stand rejected under 35 U.S.C. §103 (a) as being unpatentable over Sukhman in view of United States Patent No. 4837773, entitled DISCHARGE EXCITATION TYPE SHORT PULSE LASER, issued to Wakata et al. on June 6, 1989 ("Wakata"). This is the same rejection verbatim from the Office Action of February 10, 2005 and applicants repeat the previous response to that rejection.

In addition, in response to the Examiner's position that the "Examiner asserts that a reef can be any porous structure," applicants assert that, even assuming this interpretation of the meaning of reef, which applicants contest as incorrect based in the disclosure of the Specification in the above captioned application, the electrode 6 of FIG. 6 of Wakata still does not meet the claim limitations. The electrode 6 with holes through it is not a "portion of the discharge region" "along the surface of the gas discharge anode" that is "covered with a pre-formed reef" Therefore a *prima facie* case for obviousness is not made by the combination of Sukhman and Wakata.

For the above stated reasons, the Examiner's rejection of claims 11-12 and 24-25 is not proper and the Examiner is respectfully requested to withdraw the rejection and allow claims 11-2 and 24-25.

Claims 11-12 and 24-25 are rejected for obviousness type double patenting over United States Patent No. 6690706 and 6711202 and Claim 1 has been provisionally rejected for obviousness double patenting over co-pending application Ser. No. 10/638247. Applicants do not concede that obviousness double patenting applies to the claims based on the noted patents or patent application. Nevertheless to advance the prosecution, applicants have filed terminal disclaimers as to the noted patents and patent application. For this reason, the Examiner's rejections of claims 11-12 and 24-25 for obviousness double patenting is rendered improper and the Examiner is requested to withdraw the rejections of claims 11-2 and 24 and 25 and allow claims 11-2 and 24 and 25.

Conclusions

For the above stated reasons the Examiner's rejections of claims 3-12, 24 and 25 are improper and the Examiner is respectfully requested to withdraw the rejections of claims 3-12 and 25 and 25. The Commissioner is hereby authorized to charge to the below referenced deposit account the amount of \$390 for three terminal disclaimers in

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the above captioned application. Applicants do not believe that any additional fees or charges are due in the above captioned application for its continued prosecution, however, in the event that any such fees or charges are due and owing, then the Commissioner is hereby authorized to charge any such additional fees or charges to the deposit account of the assignee of the present application, Cymer, Inc., Deposit Account No. 03-4060.

Respectfully submitted,



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